NOV 22 1994

Environmental Services of America, Inc.

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205 Main Street
P.O. Box 1760
Brattleboro, VT 05302
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November 21, 1994

Mr. Richard Spiese
VT DEC HMMD SMS
103 South Main Street/West Building
Waterbury, VT 05671-0404

Re: Initial Site Investigation Report for Crossroads Store, Quechee, Vermont
SMS Site #93-1412

Dear Mr. Spiese:

Enclosed please find the above referenced report for your review. A copy has also been sent to Edward Kunttu at the Merchants Bank in Springfield.

Should you have any questions please call me at 800-359-3677.

Sincerely,
ENSA Environmental, Inc.

Paul D. G. Miller
Project Manager

Enclosure

470\cvr.let

Initial Site Investigation Report
Crossroads Store
Route 4
Quechee, Vermont
SMS Site #93-1412

November 10, 1994

for

The Merchants Bank
56 Main Street, P.O. Box 650
Springfield, VT 05156-0650
(802) 885-4511
Contact: Edward Kunttu

prepared by

ENSA Environmental, Inc.
205 Main Street
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77 College Street
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Contact: Paul Miller

EXECUTIVE SUMMARY

This Initial Site Investigation report describes subsurface investigation work required by the Sites Management Section (SMS) of the Vermont Department of Environmental Conservation at the site of the Crossroads Store located at the intersection of Route 4 and Waterman Hill in Quechee, Vermont. The environmental investigation was requested by the SMS following a review of tank pull forms and a subsurface assessment report (dated June 15, 1993) that indicated a release of gasoline had occurred at the site. A letter (dated July 15, 1993) requesting this investigation was sent from the SMS to Mr. Doug Evans of Evans Fuel.

On September 1, 1994, ENSA Environmental, Inc. (ENSA) contracted with The Merchants Bank of Springfield, VT (prospective buyer of the Crossroads site) to perform the work requested in the SMS letter. ENSA sent notification to the SMS on this date placing the site on the Site Investigation Expressway.

Work conducted during the recent investigation by ENSA included the drilling of eight soil borings (CSQ-1 to CSQ-8) at the site, head space screening of split spoon soil samples for volatile organic compounds (VOCs), installation of groundwater monitoring wells in the above noted bore holes, and analysis of groundwater samples for Volatile Organic Compounds by EPA Method 8020 plus MTBE. Groundwater from CSQ-1 to CSQ-4 was also analyzed for Total Petroleum Hydrocarbons by EPA Method 418.1. Soil and groundwater VOC contamination were both detected. An isoconcentration map, constructed based on the analytical results, shows the presence of two distinct BTEX and MTBE plumes at the site. The full horizontal extent of subsurface contamination has not yet been delineated.

The subject property is serviced by the municipal drinking water and sewer systems of the Town of Hartford. One private drinking water well is known to be located in the immediate vicinity of the site at the QBB (Quechee Bed & Breakfast). This well is not currently used and is kept primarily as a backup source. Other than this well, the use potential for site groundwater is considered to be low. The Ottauquechee River is located approximately 300 feet to the northeast of the site and is a potential sensitive receptor.

Conclusions and recommendations for further assessment activities are presented at the end of this report.

Table of Contents

1. INTRODUCTION . . . . . - 1 -
   1.1 Site Setting and Layout . . . . . - 1 -
   1.2 Site History and Background Information . . . . . - 2 -
      1.2.1 Site History . . . . . - 2 -
      1.2.2 Background Information . . . . . - 2 -

2. SITE ACTIVITIES . . . . . - 5 -

3. RESULTS . . . . . - 6 -
   3.1 Site Hydrology . . . . . - 6 -
   3.2 Analytical Testing Results . . . . . - 7 -
      3.2.1 Soil Contamination . . . . . - 7 -
      3.2.2 Groundwater Contamination . . . . . - 7 -
   3.3 Initial Risk Evaluation . . . . . - 8 -

4. CONCLUSIONS AND RECOMMENDATIONS . . . . . - 9 -
   4.1 Conclusions . . . . . - 9 -
   4.2 Recommendations . . . . . - 10 -

TABLES

Table I Site Information
Table II Site History
Table III Groundwater Potentiometric Data
Table III Aromatic Volatile Organic Compound Concentrations in Groundwater

APPENDICES

Appendix A Site Location Map
Appendix B Groundwater Potentiometric Map
Appendix C Soil Boring/Monitoring Well Construction Logs
Appendix D Analytical Laboratory Reports
Appendix E BTEX and MTBE Isoconcentration Map

1. INTRODUCTION

1.1 Site Setting and Layout

The subject property, known as the Crossroads Store ("the site"), is located at the intersection of Route 4 and Waterman Hill Road in Quechee, VT. Route 4 is located immediately to the south of the site with a gasoline service station/convenience store (Jiffy Mart) located on the opposite side of the road. Waterman Hill Road is located immediately to the west of the site with a retail/antique store (Waterman Place) located on the opposite side of the road. The Ottauquechee River is located approximately 300 feet to the northeast of the site. A steep bank with an elevational drop of approximately 100 feet lies between the site and the river. A Site Location Map is presented in Appendix A of this report. According to this map, the site is located at 43°38'36" North Latitude and 72°25'10" Longitude.

Table I
Site Information

Name	Site Relationship	Address	Phone Number
Harris & Phyllis Batchelder	Site Property Owners	Route 5 Fairlee, VT	(802) 333-9618
R.L. Vallee, Inc.	Site UST Owner	282 South Main Street St. Albans, VT	(802) 527-7755
The Merchants Bank (Edward Kunttu)	Prospective Site Buyer	56 Main Street, P.O. Box 650 Springfield, VT 05156-0650	(802) 885-4511
Quechee Bed & Breakfast (Ken & Susan Shannon)	Abutting Property to the North and East	Waterman Hill Road Quechee, VT	(802) 295-1776
Waterman Place (Jay Dandeneau)	Adjacent Property to the West	Waterman Hill Road Quechee, VT	(802) 457-3232
Jiffy Mart	Adjacent Property to the South	Route 4 Quechee, VT	(802) 296-6735
Site property is currently vacant and therefore has no site operator			

The site is serviced by the Town of Hartford municipal drinking water and sewage systems. Only one private drinking water well is known to be located in the vicinity of the site. This well is located at the neighboring Quechee Bed and Breakfast (QBB) and is not currently used. The QBB is also serviced by the Town of Hartford municipal drinking water system and does not rely on water from their well for any immediate purpose - only as a backup supply. Subsurface water and sewer lines extend down the east side of Waterman Hill Road. All other known utilities at the site exist as overhead lines. The layout of the site is shown on the Groundwater Potentiometric Map presented in Appendix B of this report.

1.2 Site History and Background Information

1.2.1 Site History

Table II illustrates the past site owners and the approximate date of ownership, site usage, and hazardous materials used or released and/or any potential contaminant sources. This information was obtained from Harris Batchelder, current site owner. A greater description of these details is provided in the next section on Background Information.

Table II
Site History

Site Owner/Date	Site Usage	Hazardous Materials used or released and/or any potential contaminant sources
Harris & Phyllis Batchelder/June 1988 - present	Gasoline Station/ Convenience Store	- Five USTs removed on June 3, 1993 (three gasoline USTs, one diesel fuel UST, and one #2 heating oil UST) - One 12,000 gallon gasoline UST installed on June 4, 1993 - 14-20 yd^3 of gasoline contaminated soil stockpiled on site - Unknown whether any hazardous materials releases occurred during this time period (i.e. not documented)
Unknown/? - June 1988	Gasoline Station/ Convenience Store	- Two gasoline USTs removed in 1986 (size unknown) - Five USTs installed in 1986 as noted above - Unknown whether any hazardous materials releases occurred during this time period (i.e. not documented)

1.2.2 Background Information

On June 3, 1993, a total of five (5) underground storage tanks (USTs), owned by Evans Fuels of Lebanon, NH, were removed from the site. The five USTs were removed by Lee's Oil Service of Bath, NH under contract with Vicon Corporation of Fitzwilliam, NH. The UST assessment was performed by Twin State Environmental Corporation (TSEC) of St. Albans. The USTs specifically consisted of three (3) gasoline (2k, 3k, and 4k gallon) underground storage tanks (USTs), one (1) diesel fuel 1,000 gallon UST, and one (1) #2 heating oil 550 gallon UST.

According to the tank closure report submitted by TSEC to Ted Unkles of the VT Hazardous Materials Management Division (dated June 15, 1993), the following information was described. During the UST removals, soils screened around the # 2 heating oil UST appeared to be contaminated from a gasoline source and had peak concentrations of 250 ppm, as measured by a photoionization detector. Contamination was also detected around the gasoline USTs and appeared to be from the older UST system(s).

Contaminated soils were not fully excavated and the extent of the contamination was left undefined. Also at the east side of the site, a product line was ruptured during excavation of the diesel UST and a small amount of residual product contaminated approximately 1/2 cubic yard of soil which was stockpiled. A total of 14-20 cubic yards of petroleum contaminated soils were stockpiled and polyencapsulated on the east side of the site.

A new 12,000 gallon gasoline UST was installed by Vicon Corporation beginning on June 4, 1993. The UST is owned by R.L. Vallee, Inc. During excavation of the new tank pit, located on the east side of the site, diesel fuel contamination was found present in the vicinity of an old product line. Groundwater was encountered at nine feet below the ground surface during the new tank installation. Free product was not found to be present.

In a letter to Doug Evans of Evans Fuel, dated July 15, 1993, the VT DEC Site Management Section (SMS) requested that additional investigations be conducted at the subject property. Based on a review of the tank closure report submitted by TSEC, the SMS required the following:

1. Determination of the degree and extent of contamination to the soils and groundwater. If soil is found to contain evidence of contamination at the water table, then a sufficient number of monitoring wells should be installed in locations which will adequately define the severity of groundwater contamination at the site. Groundwater samples should be analyzed using both EPA Methods 8020 and 418.1.

2. Determination of sensitive receptors with the potential to be impacted by the contamination (basements, adjacent buildings, nearby surface water, and any public or private drinking water wells). If any water supplies appear at risk from this contamination, they should be sampled and analyzed using EPA Methods 8020 and 418.1

3. Development of a plan to treat and/or monitor the contaminated soils stockpiled on site.

4. Determination of the need for long term monitoring and/or remediation at the site.

5. Submission of a summary report outlining work performed at the site as well as analytical results, site maps, receptor assessments, and appropriate conclusions and recommendations.

ENSA Environmental, Inc. (ENSA) submitted a proposal to perform the work outlined in the SMS letter, on August 30, 1994 to Edward Kunttu of The Merchants Bank in Springfield, VT. Mr. Kunttu approved the proposal and notification was sent to Richard Spiese of the SMS on September 1, 1994 placing the site on the Site Investigation Expressway. At the time of the site investigation by ENSA, the store was vacated (not in operation) and the existing 12,000 gallon gasoline UST had been evacuated of its product.

2. Site Activities

On September 26, 1994, ENSA and T&K Drilling of Troy, NH completed the installation of four groundwater monitoring wells (CSQ-1 to CSQ-4) at the site. Well locations are shown on the Groundwater Potentiometric Map presented in Appendix B. Soil samples collected during the advancement of the well borings were screened on-site according to headspace analysis protocol with a Thermo Environmental Instruments Model 580B Organic Vapor Meter (OVM) calibrated to 255 ppm of an Isobutylene span gas. Headspace screening results are included on the Soil Boring/Monitoring Well Construction Logs presented in Appendix C.

On September 29, 1994, the new site monitoring wells and other additional features were surveyed, and the groundwater levels in the monitoring wells were gauged. Depth to groundwater was measured at each well using a Solinst Model 101 electronic water level indicator capable of measuring levels to the nearest 0.01 foot. After removal of three well volumes of groundwater from each of the wells, groundwater samples were collected for laboratory analysis of Volatile Organic Compounds (VOCs) by EPA Method 8020 and MTBE and for Total Petroleum Hydrocarbons (TPH) by EPA Method 418.1. All samples were refrigerated and sent to Alpha Analytical Laboratories in Westborough, Massachusetts for analysis.

On October 14, 1994, laboratory results from the four monitoring wells were received by ENSA. Based on the contamination found in some of these samples, the installation of additional monitoring wells was planned in order to further define the extent of contamination.

On October 18, 1994, ENSA and T&K Drilling completed the installation of four additional groundwater monitoring wells (CSQ-5 to CSQ-8) downgradient of the site on the property of the QBB. Well locations are shown on the Groundwater Potentiometric Map presented in Appendix B. Soil sampling and VOC screening was conducted as that described for September 29, 1994. Sensitive receptors were delineated.

On October 24, 1994, the newest site monitoring wells (CSQ-5 to CSQ-8) were surveyed and groundwater levels from all monitoring wells were gauged. Depth to groundwater was measured at each well using a Solinst Model 101 electronic water level indicator capable of measuring levels to the nearest 0.01 foot. After removal of three well volumes of groundwater from each of the newest wells, groundwater samples were collected for laboratory analysis of Volatile Organic Compounds (VOCs) by EPA Method 8020. All samples were refrigerated and sent to Alpha Analytical Laboratories in Westborough, Massachusetts for analysis.

3. RESULTS

3.1 Site Hydrology

Depths to groundwater in the monitoring wells (as measured from the top of the PVC well heads on October 24, 1994) ranged from 2.43 feet to 11.49 feet. Groundwater elevations are presented in Table III.

Table III
Groundwater Potentiometric Data

Elevation of:	CSQ-1	CSQ-2	CSQ-3	CSQ-4	CSQ-5	CSQ-6	CSQ-7	CSQ-8
Top of PVC	100.00	98.93	98.95	98.57	89.31	89.42	90.45	88.88
Depth to Groundwater	9.01	6.24	8.53	11.49	3.48	2.70	2.43	4.99
10/24/94 Groundwater	90.99	92.69	90.42	87.08	85.83	86.72	88.02	83.89
All elevations are reported in feet from an arbitrary datum point.								

A groundwater potentiometric map (Appendix B), constructed based on the above information, indicates that at the time of data collection, groundwater flow was in a northerly direction at the site.

The hydraulic gradient between wells CSQ-2 and CSQ-8 was determined to be 0.062 cm/cm. Based on a hydraulic conductivity value of 10^{-5} cm\sec for a fine sand and silt with little clay and fine gravel, and an effective porosity estimate of 35% for soils in the vicinity of the groundwater table, an approximate groundwater velocity was determined using the following variation of Darcy's Equation:

GW_{vel} = Hydraulic Gradient x Hydraulic Conductivity/Effective Porosity
GW_{vel} = 0.065 cm/cm x 0.00001 cm/sec / 0.35
GW_{vel} = 1.86×10^{-6} cm/sec
GW_{vel} = 0.16 cm/day

3.2 Analytical Testing Results

3.2.1 Soil Contamination

During monitoring well installation split spoon soil samples were collected at five (5) foot intervals. Soils were screened for presence of volatile organic compounds (VOCs) via headspace screening protocol using an OVM. Overall readings ranged

from 0.0 ppm to 425.0 ppm with the highest reading (425.0 ppm) found in well CSQ-3. Complete records of OVM soil screening readings for each well are included in the Soil Boring/Monitoring Well Construction Logs in Appendix C.

3.2.2 Groundwater Contamination

The results of the analytical testing performed on the groundwater samples collected at the site are summarized in Table IV. Vermont Health Advisory Levels (VHALs) are included in the last column of this table for contaminant comparison.

Table IV
Aromatic Volatile Organic Compound Concentrations in Groundwater

Date	Compound	CSQ-1	CSQ-2	CSQ-3	CSQ-4	CSQ-5	CSQ-6	CSQ-7	CSQ-8	VHAL
9/29/94	Benzene	<50	<5.0	<200	**10,000**					50
	Toluene	<50	<5.0	890	**25,000**					2420
	Ethylbenzene	<50	<5.0	660	**2,500**					680
	Xylenes	<50	<5.0	**3000**	**11,000**					400
	Total BTEX	n/a	n/a	4550	48,500					----
	Methyl tert butyl ether (MTBE)	**2800**	<5.0	<200	<200					40
	TPH	0.60	<0.50	7.7	31					----
10/24/94	Benzene					**340**	1.1	<20	**84**	50
	Toluene					380	<1.0	<20	420	2420
	Ethylbenzene					260	<1.0	<20	68	680
	Xylenes					**1500**	<1.1	<20	**540**	400
	Total BTEX					**2360**	1.1	n/a	1112	----
	Methyl tert butyl ether (MTBE)					<50	**91**	**230**	<10	40
	TPH					NS	NS	NS	NS	----

All compound concentrations measured in micrograms per liter (ppb); with exception of TPH which is measured in milligrams per liter (ppm)
Compound concentrations in bold type indicate a concentration equal to or greater than the VHAL
NS = not sampled n/a = BTEX compounds not present above their detection limits; no total concentration is presented

Complete laboratory data sheets and chain of custody statement are included in Appendix D. A BTEX and MTBE Isoconcentration Map was constructed by combining the analytical results from samples collected on September 29 and October 24, 1994. Due to the short period of time between the two sampling events, inclusion of this data on one map was considered to be relevant. The isoconcentration map is included in Appendix E.

A review of the isoconcentration map shows that BTEX compounds extend from CSQ-3 (the area where the former gasoline USTs existed) downgradient to the neighboring QBB property and CSQ-8. MTBE was detected only in samples collected from monitoring wells CSQ-1, 6, and 7, and as such, appears to exist as a separate plume. The occurrence of two distinct plumes may indicate the presence of two separate release incidents. The presence of only MTBE suggests that a low level release of gasoline may have occurred or is occurring in the vicinity of the on-site gasoline USTs such that only the more water soluble constituents of gasoline are being released at detectable levels. It is also possible that inherent limitations in analytical testing protocol may explain the absence/presence of MTBE in site samples rather than an actual representation of groundwater conditions.

3.3 Initial Risk Evaluation

The nearest sensitive human receptors would be future site operators (site is currently vacant) and potentially the occupants of the QBB. Due to a relatively shallow groundwater table at the site, the potential for gasoline related vapor migration into nearby buildings does exist, but the possibility of dermal exposure to the contaminants is unlikely unless excavation at the site were to occur.

The site and neighboring properties are serviced by the Town of Hartford municipal drinking water and sewage systems; the service lines are located along the east side of Waterman Hill Road. Due to the shallow depth to groundwater, the utility trenches may serve as preferential migration pathways to site contamination.

The potential for use of the groundwater resource at the site appears to be small with exception of a private drinking water well located across gradient to groundwater flow at the neighboring QBB. This drinking water well is not currently in use. The QBB is also serviced by the Town of Hartford municipal drinking water system and does not rely on water from their well for any immediate purpose - only as a backup supply. According

to personnel at the Town of Hartford Public Works Department, the site lies outside of any Well Head Protection Area designated for the well supplying water to the village of Quechee.

The nearest sensitive environmental receptor appears to be the Ottauquechee River which is approximately 300 feet northeast of the site. The river and the bank leading down to the river were visually scanned for any seeps, points of mineral oxidation, or product sheens; no evidence of petroleum contamination was observed.

Based on the environmental investigations conducted to date, an imminent hazard does not appear to exist at the site at this time. Relatively high levels of BTEX compounds have been detected in a sample collected from the groundwater monitoring well (CSQ-4) located west of the site building. The potential for vapor migration into the site building and preferential migration of gasoline related compounds via subsurface utility trenches does exist.

4. Conclusions and Recommendations

The conclusions and recommendations of ENSA Environmental, Inc. are based on the premise that all information obtained during these environmental investigations is accurate. Conditions may change with time that may necessitate a re-evaluation of certain conclusions and recommendations.

4.1 Conclusions

A release of petroleum related volatile organic compounds apparently occurred in the area of the former gasoline USTs located on the west side of the site building. This UST location has held various gasoline and fuel oil USTs in the past - the most recent which have been removed in 1986 and 1993. This area does not contain any USTs currently and any contamination found is a result of former UST/piping releases. Laboratory analyses of monitoring well groundwater from this UST area and at downgradient locations show that BTEX contamination exists in excess of the VHALs.

Also, it appears that a release of a petroleum related volatile organic compound (MTBE) has occurred on the east side of the site building in the area of the existing 12,000 gallon gasoline UST. Whether this contamination has occurred as a result of this UST or any of the USTs upgradient of the site at the neighboring Jiffy Mart, has not yet been determined. This MTBE plume appears to be totally separate from the BTEX plume. Laboratory analyses of monitoring well groundwater from this UST area and in the downgradient direction show that MTBE contamination exists in excess of the VHAL.

Hydrologic investigations indicate that at the time of data collection, groundwater ranged from approximately 2.5 to 11.5 feet below the ground surface. Groundwater velocity was estimated to be approximately 0.16 cm/day flowing in a northerly direction (i.e. toward the Ottauquechee River).

Based on the environmental investigations conducted to date, an imminent hazard does not appear to exist at the site at this time. Relatively high levels of BTEX compounds have been detected in a sample collected from the groundwater monitoring well (CSQ-4) located west of the site building. The potential for vapor migration into the site building and preferential migration of gasoline related compounds via subsurface utility trenches does exist. Consequently, additional investigations to further assess the horizontal extent and vapor migration of gasoline related compounds are warranted.

4.2 Recommendations

ENSA Environmental, Inc. recommends:

the installation of three to four additional monitoring wells in order to further determine the extent of contamination at the site and its neighboring properties. Specifically, the three proposed monitoring wells will be located as that depicted in Appendix E. A fourth monitoring well (or more) may be installed on the day of the drilling if it is concluded that: the extent of contamination has not been thoroughly determined; permission exists for the drilling; and there is sufficient time;

the resampling of all site monitoring wells and analysis of the groundwater samples for VOCs by EPA Method 8020. Based on these results, the need for long term monitoring and/or remediation at the site will be determined;

the surveying of all new monitoring wells for incorporation into existing site map;

the sampling of the QBB backup drinking water supply for analysis of VOCs by EPA Method 524;

the screening of the Crossroads Market building and any other building suspected of accumulation of elevated levels of gasoline related VOCs through the use of an OVM;

performance of a soil gas survey at strategic locations including in the vicinity of the sewer and water lines along Waterman Hill Road, the west side of the site building, and at the outer foundation wall of the QBB to assess the horizontal extent of site contamination. Based on the level of VOCs detected in the vicinity of the site and QBB structures, a decision to perform low level air monitoring for BTEX compounds at these SGS locations will be made;

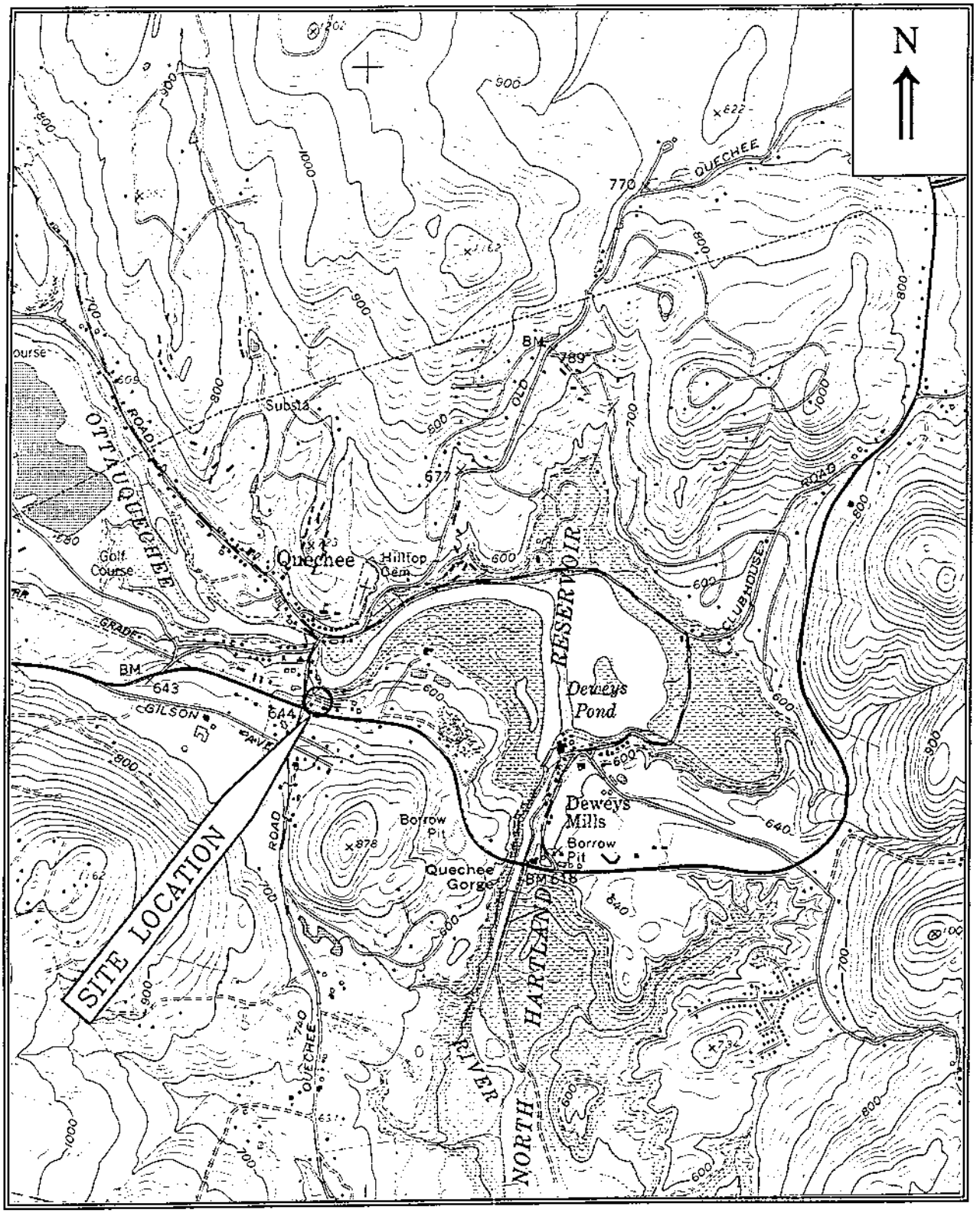
the screening of the existing 14-20 yd^3 soil pile for VOCs using an OVM for its subsequent removal to an appropriate disposal facility;

the submittal of the above information in a summary report including conclusions and recommendations.

Appendix A
Site Location Map

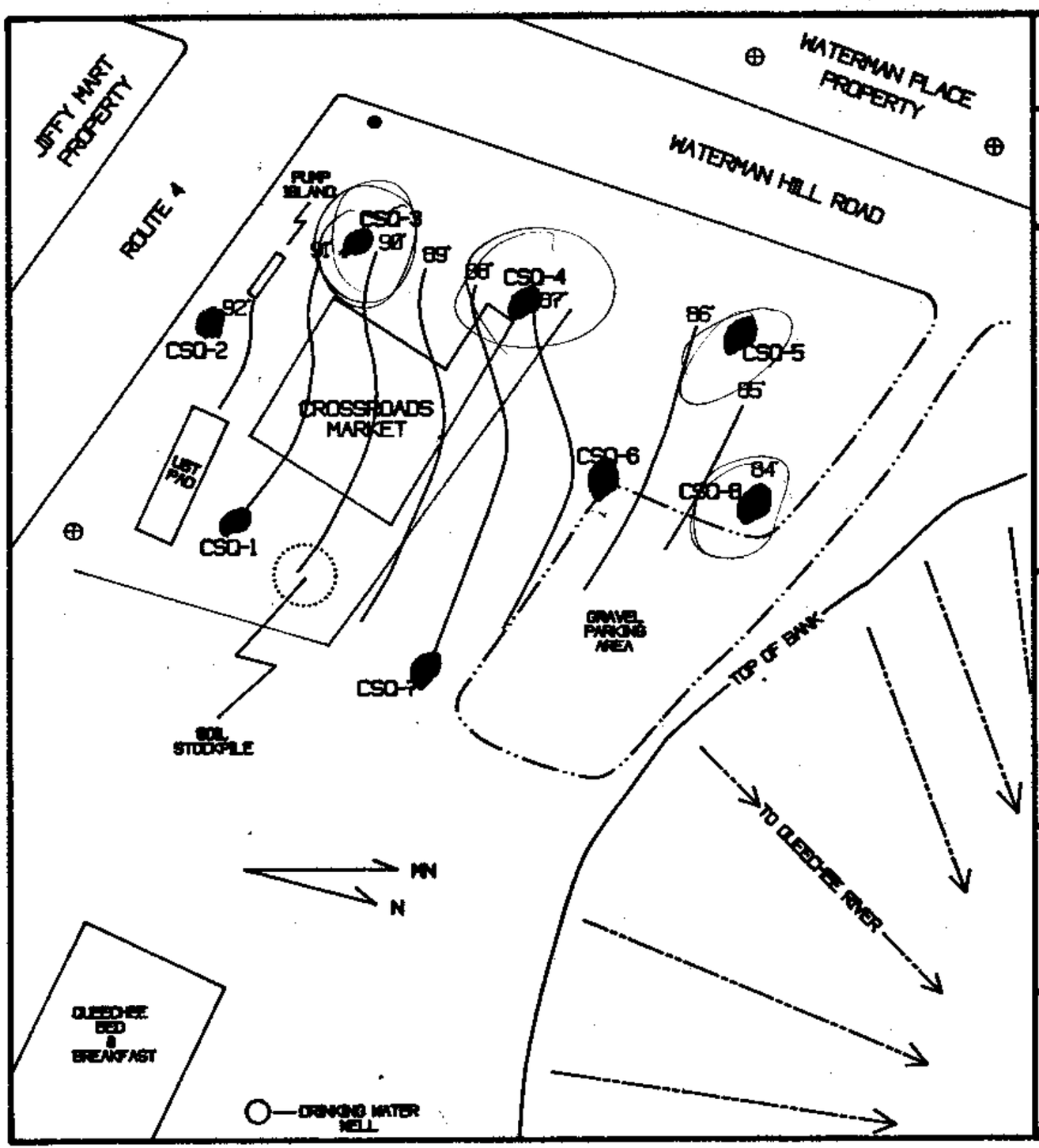
ENSA ENVIRONMENTAL, INC.
1-(800)-359-3677

205 MAIN STREET
BRATTLEBORO, VT 05301



Site Locus Scale 1:24,000	USGS Topographic Map Quechee Quadrangle Photorevised Edition 1988	Crossroads Store Route 4 Quechee, VT

Appendix B
Groundwater Potentiometric Map



GROUNDWATER POTENTIOMETRIC MAP FOR 10/24/94

CROSSROADS MARKET
ROUTE 4
QUEECHEE, VERMONT

LEGEND

- CSO-3 — MONITORING WELL
- 89' — GROUNDWATER CONTOUR AT 89 FEET (CONTOUR INTERVAL OF 1 FOOT)
- FENCE LINE (ALSO DENOTES EXTENT OF CROSSROADS MARKET PROPERTY)
- ⊕ — PROPOSED MONITORING WELL
- ● — TELEPHONE POLE

MONITORING WELL GROUNDWATER ELEVATIONS (IN FEET)

CSO-1	90.99	CSO-5	85.83
CSO-2	92.69	CSO-6	86.72
CSO-3	90.42	CSO-7	88.02
CSO-4	87.09	CSO-8	83.89

SCALE
1 : 360

0 30 60 FEET

PREPARED BY:
ENSA ENVIRONMENTAL, INC.
P.O. BOX 1760, 205 MAIN STREET
BRATTLEBORO, VERMONT 05302

Appendix C
Soil Boring/Monitoring Well Construction Logs

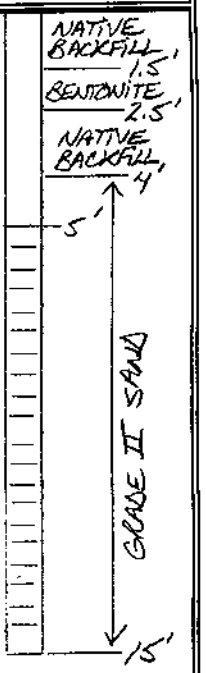
ENSA/TRI-S, INC. ENVIRONMENTAL CONSULTING
SOIL BORING/MONITORING WELL LOG

Project #: 470 Date: 9/26/94
Project Name: Crossroads Store
Location: Quechee, VT
Driller: T & K Drilling
TEC Personnel: KHJW
Boring/Well #: CSQ-1 Sheet 1 of 1

SITE LOCUS

SEE GROUNDWATER POTENTIOMETRIC MAP

Depth	Blow Counts 0-6	6-12	12-18	18-24	Rec.	OVM	Soil Characterization	As Built
0 - 2	sample off the auger flights				—	1.0	brown fine to medium sand, some silt, little fine gravel, dry	
5 - 7	2	5	7	19	18	0.0	brown fine to medium sand, some silt, little fine gravel, dry	
10 - 12	4	7	11	6	20	15.0	brown fine to medium sand, some silt, little fine gravel, wet	
15 -17	25	47	63	—	8	3.0	dark brown fine to medium sand and silt, little clay and fine gravel, wet	



Drilling Method: HSA
Total Well Depth: 15'
Groundwater Depth: _____
PVC Elevation: _____

Screen Diameter: 2" Length: 10.0'
Riser Diameter: 2" Length: 5.0'
Slot Size: 10
Ground Elevation: _____

Notes:
1. Split spoon soil samples are screened for organic vapors via headspace method using a Thermo Environmental Instruments Inc. Organic Vapor Meter Model 580B.
2. ND indicates nondetectable contaminant concentrations as read by the OVM.
3. Samples are collected using a Split Spoon Sampler unless otherwise indicated.
4. Split Spoon Sampler has a 2" diameter and is driven using a 140 lb. hammer falling 30 inches.
5. HSA = Hollow Stem Auger, AR = Air Rotary

ENSA/TRI-S, INC. ENVIRONMENTAL CONSULTING
SOIL BORING/MONITORING WELL LOG

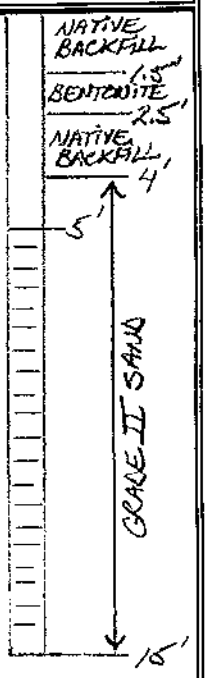
Project #: 470 Date: 9/26/94
Project Name: Crossroads Store
Location: Quechee, VT
Driller: T & K Drilling
TEC Personnel: KHJW
Boring/Well #: CSQ-2 Sheet 1 of 1

SITE LOCUS

SEE GROUNDWATER POTENTIOMETRIC MAP

Depth	Blow Counts 0-6	6-12	12-18	18-24	Rec.	OVM	Soil Characterization
0 - 2	sample off the auger flights				—	0.0	brown fine to medium sand, some silt, little fine gravel, dry
5 - 7	5	7	6	8	20	0.0	brown fine sand and silt, some clay, little fine gravel, moist
10 - 12	5	7	6	10	18	0.0	brown fine sand and silt, little fine gravel, wet
15 -16	37	98			10	0.0	brown-gray fine sand and fine gravel, some silt, wet (refusal at 16')

As Built



Drilling Method: HSA
Total Well Depth: 15'
Groundwater Depth: _____
PVC Elevation: _____

Screen Diameter: 2" Length: 10.0'
Riser Diameter: 2" Length: 5.0'
Slot Size: 10
Ground Elevation: _____

Notes:
1. Split spoon soil samples are screened for organic vapors via headspace method using a Thermo Environmental Instruments Inc. Organic Vapor Meter Model 580B.
2. ND indicates nondetectable contaminant concentrations as read by the OVM.
3. Samples are collected using a Split Spoon Sampler unless otherwise indicated.
4. Split Spoon Sampler has a 2" diameter and is driven using a 140 lb. hammer falling 30 inches.
5. HSA = Hollow Stem Auger, AR = Air Rotary

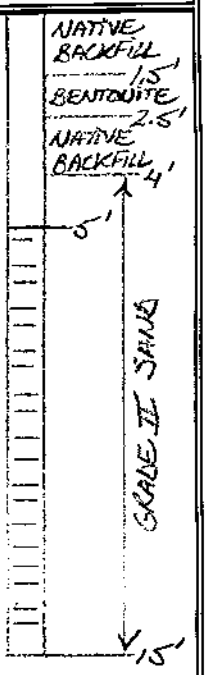
ENSA/TRI-S, INC. ENVIRONMENTAL CONSULTING
SOIL BORING/MONITORING WELL LOG

Project #: 470 Date: 9/26/94
Project Name: Crossroads Store
Location: Quechee, VT
Driller: T & K Drilling
TEC Personnel: KHJW
Boring/Well #: CSQ-3 Sheet 1 of 1

SITE LOCUS

SEE GROUNDWATER POTENTIOMETRIC MAP

Depth	Blow Counts 0-6	6-12	12-18	18-24	Rec.	OVM	Soil Characterization	As Built
0 - 2	sample off the auger flights				—	2.5	brown fine to medium sand and silt, little fine gravel, dry	
5 - 7	4	5	6	5	18	425.0	brown fine sand and silt, little fine to coarse gravel, dry	
10 - 12	5	9	100		8	351.0	brown fine sand and silt, little fine to coarse gravel, moist	
15 -17	8	12	14	18	20	300.0 (15-15.5') 21.0 (15.5-17')	brown fine to medium sand and silt, some fine gravel, wet brown fine sand and silt, little fine gravel, wet	



Drilling Method: HSA
Total Well Depth: 15'
Groundwater Depth: _____
PVC Elevation: _____

Screen Diameter: 2" Length: 10.0'
Riser Diameter: 2" Length: 5.0'
Slot Size: 10
Ground Elevation: _____

Notes:
1. Split spoon soil samples are screened for organic vapors via headspace method using a Thermo Environmental Instruments Inc. Organic Vapor Meter Model 580B.
2. ND indicates nondetectable contaminant concentrations as read by the OVM.
3. Samples are collected using a Split Spoon Sampler unless otherwise indicated.
4. Split Spoon Sampler has a 2" diameter and is driven using a 140 lb. hammer falling 30 inches.
5. HSA = Hollow Stem Auger, AR = Air Rotary

ENSA/TRI-S, INC. ENVIRONMENTAL CONSULTING
SOIL BORING/MONITORING WELL LOG

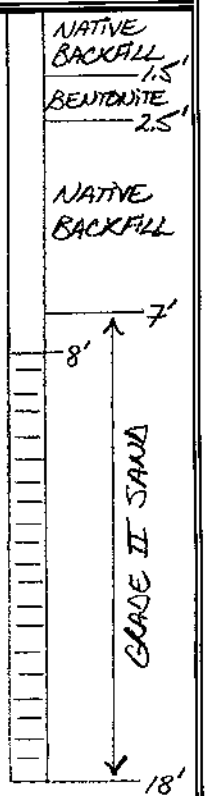
Project #: 470 Date: 9/26/94
Project Name: Crossroads Store
Location: Quechee, VT
Driller: T & K Drilling
TEC Personnel: KHJW
Boring/Well #: CSQ-4 Sheet 1 of 1

SITE LOCUS

SEE GROUNDWATER POTENTIOMETRIC MAP

Depth	Blow Counts 0-6	6-12	12-18	18-24	Rec.	OVM	Soil Characterization
0 - 2	sample off the auger flights				—	0.0	dark brown fine sand and silt, some fine gravel, dry
5 - 7	1	1	1	1	8	0.0	dark brown fine sand and silt, some fine gravel, pieces of wood, dry
10 - 12	12	11	12	12	18	376.0	brown fine sand and silt, trace fine gravel, moist
15 -17	4	4	6	10	18	250.0	brown fine sand and silt, some black organics, little clay, trace fine gravel, wet

As Built



Drilling Method: HSA
Total Well Depth: 18'
Groundwater Depth: _____
PVC Elevation: _____

Screen Diameter: 2" Length: 10.0'
Riser Diameter: 2" Length: 8.0'
Slot Size: 10
Ground Elevation: _____

Notes:
1. Split spoon soil samples are screened for organic vapors via headspace method using a Thermo Environmental Instruments Inc. Organic Vapor Meter Model 580B.
2. ND indicates nondetectable contaminant concentrations as read by the OVM.
3. Samples are collected using a Split Spoon Sampler unless otherwise indicated.
4. Split Spoon Sampler has a 2" diameter and is driven using a 140 lb. hammer falling 30 inches.
5. HSA = Hollow Stem Auger, AR = Air Rotary

ENSA/TRI-S, INC. ENVIRONMENTAL CONSULTING
SOIL BORING/MONITORING WELL LOG

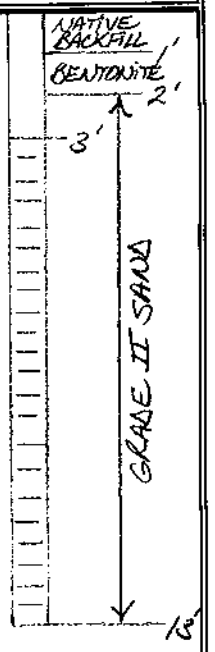
Project #: 470 Date: 10/18/94
Project Name: Crossroads Store
Location: Quechee, VT
Driller: T & K Drilling
TEC Personnel: KHJW
Boring/Well #: CSQ-5 Sheet 1 of 1

SITE LOCUS

SEE GROUNDWATER POTENTIOMETRIC MAP

Depth	Blow Counts 0-6	6-12	12-18	18-24	Rec.	OVM	Soil Characterization
0 - 2	sample off the auger flights				—	0.0	dark brown fine sand and silt, some fine gravel, dry
3.5	sample off the auger flights				—	22.0	dark brown fine sand and silt, some fine gravel, dry
5 - 7	5	14	11	9	10	331.0	dark brown fine sand and silt, some fine gravel, dry
10 - 12	1	3	5	9	20	306.0 (10-11') 19.0 (11-12')	olive-gray fine sand and silt, some clay, trace fine gravel, wet (10-11') olive-gray fine sand, silt, and clay, wet (11-12')

As Built



Drilling Method: HSA
Total Well Depth: 13'
Groundwater Depth: _____
PVC Elevation: _____

Screen Diameter: 2" Length: 10.0'
Riser Diameter: 2" Length: 3.0'
Slot Size: 10
Ground Elevation: _____

Notes:
1. Split spoon soil samples are screened for organic vapors via headspace method using a Thermo Environmental Instruments Inc. Organic Vapor Meter Model 580B.
2. ND indicates nondetectable contaminant concentrations as read by the OVM.
3. Samples are collected using a Split Spoon Sampler unless otherwise indicated.
4. Split Spoon Sampler has a 2" diameter and is driven using a 140 lb. hammer falling 30 inches.
5. HSA = Hollow Stem Auger, AR = Air Rotary

ENSA/TRI-S, INC. ENVIRONMENTAL CONSULTING
SOIL BORING/MONITORING WELL LOG

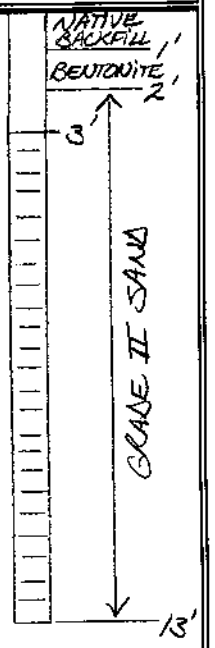
Project #: 470 Date: 10/18/94
Project Name: Crossroads Store
Location: Quechee, VT
Driller: T & K Drilling
TEC Personnel: KHJW
Boring/Well #: CSQ-6 Sheet 1 of 1

SITE LOCUS

SEE GROUNDWATER POTENTIOMETRIC MAP

Depth	Blow Counts 0-6	6-12	12-18	18-24	Rec.	OVM	Soil Characterization
0 - 2	sample off the auger flights				---	48.0	olive-gray and brown fine sand and silt, little fine gravel and clay, dry
5 - 7	6	50			6	1.5	olive-gray and brown fine sand and silt, some clay, little fine gravel, dry
10 - 12	8	20	23	32	14	1.8 (10-11') 7.0 (11-12')	olive-gray fine sand and silt, some clay, little fine gravel, wet

As Built



Drilling Method: HSA
Total Well Depth: 13'
Groundwater Depth: _____
PVC Elevation: _____

Screen Diameter: 2" Length: 10.0'
Riser Diameter: 2" Length: 3.0'
Slot Size: 10
Ground Elevation: _____

Notes:
1. Split spoon soil samples are screened for organic vapors via headspace method using a Thermo Environmental Instruments Inc. Organic Vapor Meter Model 5808.
2. ND indicates nondetectable contaminant concentrations as read by the OVM.
3. Samples are collected using a Split Spoon Sampler unless otherwise indicated.
4. Split Spoon Sampler has a 2" diameter and is driven using a 140 lb. hammer falling 30 inches.
5. HSA = Hollow Stem Auger, AR = Air Rotary

ENSA/Tri-S, Inc. Environmental Consulting
Soil Boring/Monitoring Well Log

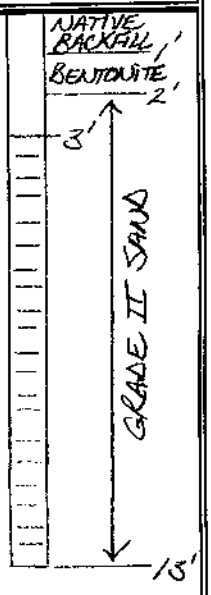
Project #: 470 Date: 10/18/94
Project Name: Crossroads Store
Location: Quechee, VT
Driller: T & K Drilling
TEC Personnel: KHJW
Boring/Well #: CSQ-7 Sheet 1 of 1

SITE LOCUS

SEE GROUNDWATER POTENTIOMETRIC MAP

Depth	Blow Counts 0-6	6-12	12-18	18-24	Rec.	OVM	Soil Characterization
0 - 2	sample off the auger flights				---	0.0	olive-gray and brown fine to medium sand and silt, little clay, trace fine gravel, dry
5 - 7	6	40	17	13	14	3.5	olive-gray fine sand and silt, some clay, little fine gravel, dry
10 - 12	9	12	14	18	20	0.0	olive-gray fine to coarse sand and silt, some clay, little fine gravel, wet

As Built



Drilling Method: HSA
Total Well Depth: 13'
Groundwater Depth: _____
PVC Elevation: _____

Screen Diameter: 2" Length: 10.0'
Riser Diameter: 2" Length: 3.0'
Slot Size: 10
Ground Elevation: _____

Notes:
1. Split spoon soil samples are screened for organic vapors via headspace method using a Thermo Environmental Instruments Inc. Organic Vapor Meter Model 580B.
2. ND indicates nondetectable contaminant concentrations as read by the OVM.
3. Samples are collected using a Split Spoon Sampler unless otherwise indicated.
4. Split Spoon Sampler has a 2" diameter and is driven using a 140 lb. hammer falling 30 inches.
5. HSA = Hollow Stem Auger, AR = Air Rotary

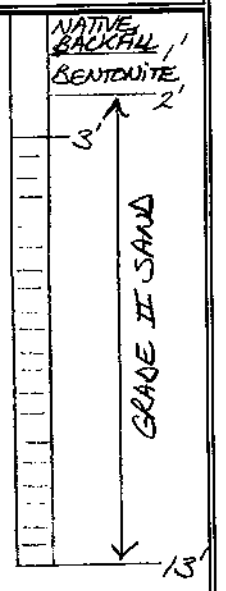
ENSA/TRI-S, INC. ENVIRONMENTAL CONSULTING
SOIL BORING/MONITORING WELL LOG

Project #: 470 Date: 10/18/94
Project Name: Crossroads Store
Location: Quechee, VT
Driller: T & K Drilling
TEC Personnel: KHJW
Boring/Well #: CSQ-8 Sheet 1 of 1

SITE LOCUS

SEE GROUNDWATER POTENTIOMETRIC MAP

Depth	Blow Counts 0-6	6-12	12-18	18-24	Rec.	OVM	Soil Characterization	As Built
0 - 2	sample off the auger flights				—	5.5	olive-gray and brown fine to medium sand and silt, some clay, trace fine gravel, dry	
5 - 7	3	6	8	10	14	415.0	olive-gray fine sand, silt, and clay, trace fine gravel, dry	
10 - 11	16	16			8	176.0	gray to light gray fine to coarse sand and silt, some fine to coarse gravel, wet (refusal at 13' - mica schist)	
11 - 12			16	18	8	27.0		



Drilling Method: HSA
Total Well Depth: 13'
Groundwater Depth: _____
PVC Elevation: _____

Screen Diameter: 2" Length: 10.0'
Riser Diameter: 2" Length: 3.0'
Slot Size: 10
Ground Elevation: _____

Notes:
1. Split spoon soil samples are screened for organic vapors via headspace method using a Thermo Environmental Instruments Inc. Organic Vapor Meter Model 580B.
2. ND indicates nondetectable contaminant concentrations as read by the OVM.
3. Samples are collected using a Split Spoon Sampler unless otherwise indicated.
4. Split Spoon Sampler has a 2" diameter and is driven using a 140 lb. hammer falling 30 inches.
5. HSA = Hollow Stem Auger, AR = Air Rotary

Appendix D
Analytical Laboratory Reports

ALPHA ANALYTICAL LABORATORIES

Eight Walkup Drive
Westborough, Massachusetts 01581-1019
(508) 898-9220

MA 086 NH 198958-A CT PH-0574 NY 11148 NC 320 SC 88006 RI A65

CERTIFICATE OF ANALYSIS

Client: ENSA Environmental, Inc.

Address: 205 Main Street; 3rd Floor
Brattleboro, VT 05301

Attn: Kirsten Wade

Project Number: 470

Site: Crossroads Store/Mobil

Laboratory Job Number: L9408040

Invoice Number: 67411

Date Received: 30-SEP-94

Date Reported: 12-OCT-94

Delivery Method: Alpha

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L9408040-01	CSQ-1-92994-470	Quechee, VT
L9408040-02	CSQ-2-92994-470	Quechee, VT
L9408040-03	CSQ-3-92994-470	Quechee, VT
L9408040-04	CSQ-4-92994-470	Quechee, VT

Authorized by: James R. Roth

James R. Roth, PhD - Laboratory Manager

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA 086 NH 198958-A CT PH-0574 NY 11148 NC 320 SC 88006 RI A65

Laboratory Sample Number: L9408040-01
CSQ-1-92994-470
Sample Matrix: WATER

Condition of Sample: Satisfactory

Number & Type of Containers: 1 Amber Glass

Date Collected: 29-SEP-94
Date Received : 30-SEP-94
Date Reported : 12-OCT-94

Field Prep: None

PARAMETER	RESULT	UNITS	REF	METHOD	DATES PREP	DATES ANALYSIS
Hydrocarbons, Total	0.60	mg/l	1	418.1	04-Oct	04-Oct

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA 086 NH 198958-A CT PH-0574 NY 11148 NC 320 SC 88006 RI A65

Laboratory Sample Number: L9408040-02
CSQ-2-92994-470
Sample Matrix: WATER

Date Collected: 29-SEP-94
Date Received : 30-SEP-94
Date Reported : 12-OCT-94

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1 Amber Glass

PARAMETER	RESULT	UNITS	REF	METHOD	DATES PREP	DATES ANALYSIS
Hydrocarbons, Total	< 0.50	mg/l	1	418.1	04-Oct	04-Oct

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

RECEIVED OCT 14 1994

MA 086 NH 198958-A CT PH-0574 NY 11148 NC 320 SC 88006 RI A65

Laboratory Sample Number: L9408040-03
CSQ-3-92994-470
Sample Matrix: WATER

Date Collected: 29-SEP-94
Date Received : 30-SEP-94
Date Reported : 12-OCT-94

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1 Amber Glass

PARAMETER	RESULT	UNITS	REF	METHOD	DATES PREP	DATES ANALYSIS
Hydrocarbons, Total	7.7	mg/l	1	418.1	04-Oct	04-Oct

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA 086 NH 198958-A CT PH-0574 NY 11148 NC 320 SC 88006 RI A65

Laboratory Sample Number: L9408040-04
CSQ-4-92994-470
Sample Matrix: WATER

Date Collected: 29-SEP-94
Date Received : 30-SEP-94
Date Reported : 12-OCT-94

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1 Amber Glass

PARAMETER	RESULT	UNITS	REF	METHOD	DATES PREP	DATES ANALYSIS
Hydrocarbons, Total	31.	mg/l	1	418.1	04-Oct	04-Oct

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE SPIKE ANALYSES

Laboratory Job Number: L9408040

Parameter	% Recovery
Hydrocarbons, Total	SPIKE for sample(s) 01-04
	107

REFERENCES

1. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. 1986.

GLOSSARY OF TERMS AND SYMBOLS

< Indicates analyte not detected at stated value, i.e. Reporting Detection Limit.

REF Reference number in which test method may be found.

METHOD Method number by which analysis was performed.

ALPHA Analytical Laboratories, Inc.

Eight Walkup Drive
Westborough, MA 01581-1019
508-898-9220 FAX 508-898-9193

CHAIN OF CUSTODY RECORD and ANALYSIS REQUEST RECORD

No. 36493

Sheet 1 of 1

Company Name: ENSA Environmental, Inc.	Project Number: 470 / P.O. Number: 2547	Project Name/Location: CROSSROADS STORE - MOBIL, QUECHEE, VT
Date Received in Lab: 9/30	Date Due: 10/14	
Company Address: 205 Main St, 3rd Floor, Brattleboro, VT 05301	Phone Number: 802 254 3677 / FAX No.: 254 7630	Project Manager: KIRSTEN WADE
Alpha Job Number: (Lab use only) 940 8040		

Container Codes: P = Plastic V = Vial C = Cube G = Glass A = Amber Glass B = Bacteria Container O = Other

MATRIX / SOURCE CODES: MW = Monitoring Well RO = Runoff O = Outfall W = Well LF = Landfill L = Lake/Pond/Ocean I = Influent E = Effluent DW = Drinking Water R = River Stream S = Soil SG = Sludge B = Bottom Sediment X1 = Other___ X2 = Other___

ALPHA Lab # (Lab Use Only)	Sample I.D.	Containers (number/type)	Matrix / Source	Unpres.	Ice	Nitric	Sulfuric	HCl	Other	Solubles - F.F.	Sampling Date	Sampling Time	Analysis Requested
8040.1	CSQ-1-92994-470	(~~2~~/V) (1/A)	MW					X			9/29	2:42	~~8020~~ + 418.1 (TPH)
.2	CSQ-2-92994-470	(~~2/V~~) (1/A)	MW					X			9/29	2:46	~~8020~~ + 418.1 (TPH)
.3	CSQ-3-92994-470	(~~2/V~~) (1/A)	MW					X			9/29	2:48	~~8020~~ + 418.1 (TPH) } Rush Analysis 8020's only
.4	CSQ-4-92994-470	(~~2/V~~) (1/A)	MW					X			9/29	2:55	~~8020~~ + 418.1 (TPH)
.~~5~~	~~CSQ-02-92994-470~~	~~(2/V)~~	~~MW~~					~~X~~			~~9/29~~	~~2:50~~	~~8020~~
.~~6~~	~~CSQ-01-92994-470~~	~~(1/V)~~	~~MW~~					~~X~~			~~9/29~~	~~2:00~~	~~8020~~
	TOTAL	(11/V) (4/A)											

Sampler's Signature	Affiliation	Date	Time
David C. Ball	ENSA ENVIRONMENTAL	9/30/94	9:00

ADDITIONAL COMMENTS:
1 TRIP BLANK ~~RUSH - 2 working Days~~
1 DUPLICATE
split w/ Job # 8041

NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	David C. Ball	C Dim	9/30	1:00
2	C D	P. McGuil	9/30	5:00
3				
4				

ALPHA ANALYTICAL LABORATORIES RECEIVED NOV 10 1994

Eight Walkup Drive
Westborough, Massachusetts 01581-1019
(508) 898-9220

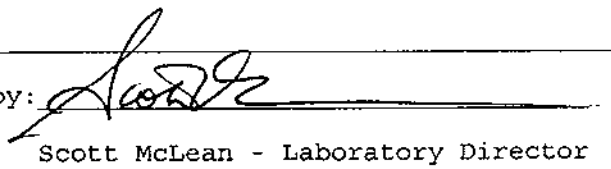
MA 086 NH 198958-A CT PH-0574 NY 11148 NC 320 SC 88006 RI A65

CERTIFICATE OF ANALYSIS

Client: ENSA Environmental, Inc.
Address: 205 Main Street; 3rd Floor
Brattleboro, VT 05301
Attn: Paul Miller
Project Number: 470
Site: Crossroads Store

Laboratory Job Number: L9408811
Invoice Number: 68290
Date Received: 25-OCT-94
Date Reported: 08-NOV-94
Delivery Method: Alpha

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L9408811-01	CSQ-5-102494-470	Quechee, VT
L9408811-02	CSQ-6-102494-470	Quechee, VT
L9408811-03	CSQ-7-102494-470	Quechee, VT
L9408811-04	CSQ-8-102494-470	Quechee, VT
L9408811-05	CSQ-02-102494-470	Quechee, VT
L9408811-06	CSQ-01-102494-470	Quechee, VT

Authorized by: 
Scott McLean - Laboratory Director

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

RECEIVED NOV 10 1994

MA 086 NH 198958-A CT PH-0574 NY 11148 NC 320 SC 88006 RI A65

Laboratory Sample Number: L9408811-01
CSQ-5-102494-470
Sample Matrix: WATER

Date Collected: 24-OCT-94
Date Received : 25-OCT-94
Date Reported : 08-NOV-94

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2 Vial

PARAMETER	RESULT	UNITS	REF	METHOD	DATES PREP	DATES ANALYSIS
Aromatic Volatile Organics			1	8020		28-OCT
Benzene	340	ug/l				
Toluene	380	ug/l				
Ethylbenzene	260	ug/l				
Xylenes	1500	ug/l				
1,2-Dichlorobenzene	< 50.	ug/l				
1,3-Dichlorobenzene	< 50.	ug/l				
1,4-Dichlorobenzene	< 50.	ug/l				
Chlorobenzene	< 50.	ug/l				
Methyl tert butyl ether	< 50.	ug/l				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

RECEIVED NOV 10 1994

MA 086 NH 198958-A CT PH-0574 NY 11148 NC 320 SC 88006 RI A65

Laboratory Sample Number: L9408811-02
CSQ-6-102494-470
Sample Matrix: WATER

Date Collected: 24-OCT-94
Date Received : 25-OCT-94
Date Reported : 08-NOV-94

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2 Vial

PARAMETER	RESULT	UNITS	REF	METHOD	DATES PREP	DATES ANALYSIS
Aromatic Volatile Organics			1	8020		27-OCT
Benzene	1.1	ug/l				
Toluene	< 1.0	ug/l				
Ethylbenzene	< 1.0	ug/l				
Xylenes	1.1	ug/l				
1,2-Dichlorobenzene	< 1.0	ug/l				
1,3-Dichlorobenzene	< 1.0	ug/l				
1,4-Dichlorobenzene	< 1.0	ug/l				
Chlorobenzene	< 1.0	ug/l				
Methyl tert butyl ether	91.	ug/l				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

RECEIVED NOV 10 1994

MA 086 NH 198958-A CT PH-0574 NY 11148 NC 320 SC 88006 RI A65

Laboratory Sample Number: L9408811-03
CSQ-7-102494-470
Sample Matrix: WATER

Date Collected: 24-OCT-94
Date Received : 25-OCT-94
Date Reported : 08-NOV-94

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2 Vial

PARAMETER	RESULT	UNITS	REF	METHOD	DATES PREP	DATES ANALYSIS
Aromatic Volatile Organics			1	8020		28-OCT
Benzene	< 20.	ug/l				
Toluene	< 20.	ug/l				
Ethylbenzene	< 20.	ug/l				
Xylenes	< 20.	ug/l				
1,2-Dichlorobenzene	< 20.	ug/l				
1,3-Dichlorobenzene	< 20.	ug/l				
1,4-Dichlorobenzene	< 20.	ug/l				
Chlorobenzene	< 20.	ug/l				
Methyl tert butyl ether	230	ug/l				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

RECEIVED NOV 10 1994

MA 086 NH 198958-A CT PH-0574 NY 11148 NC 320 SC 88006 RI A65

Laboratory Sample Number: L9408811-04
CSQ-8-102494-470
Sample Matrix: WATER

Date Collected: 24-OCT-94
Date Received : 25-OCT-94
Date Reported : 08-NOV-94

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2 Vial

PARAMETER	RESULT	UNITS	REF	METHOD	DATES PREP	DATES ANALYSIS
Aromatic Volatile Organics			1	8020		27-OCT
Benzene	84.	ug/l				
Toluene	420	ug/l				
Ethylbenzene	68.	ug/l				
Xylenes	540	ug/l				
1,2-Dichlorobenzene	< 10.	ug/l				
1,3-Dichlorobenzene	< 10.	ug/l				
1,4-Dichlorobenzene	< 10.	ug/l				
Chlorobenzene	< 10.	ug/l				
Methyl tert butyl ether	< 10.	ug/l				

Comments: Complete list of References and Glossary of Terms found in Addendum I

RECEIVED NOV 10 1994

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA 086 NH 198958-A CT PH-0574 NY 11148 NC 320 SC 88006 RI A65

Laboratory Sample Number: L9408811-05
CSQ-02-102494-470
Sample Matrix: WATER

Date Collected: 24-OCT-94
Date Received : 25-OCT-94
Date Reported : 08-NOV-94

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2 Vial

PARAMETER	RESULT	UNITS	REF	METHOD	DATES PREP	DATES ANALYSIS
Aromatic Volatile Organics			1	8020		28-OCT
Benzene	2.5	ug/l				
Toluene	< 1.0	ug/l				
Ethylbenzene	< 1.0	ug/l				
Xylenes	1.0	ug/l				
1,2-Dichlorobenzene	< 1.0	ug/l				
1,3-Dichlorobenzene	< 1.0	ug/l				
1,4-Dichlorobenzene	< 1.0	ug/l				
Chlorobenzene	< 1.0	ug/l				
Methyl tert butyl ether	89.	ug/l				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

RECEIVED NOV 10 1994

MA 086 NH 198958-A CT PH-0574 NY 11148 NC 320 SC 88006 RI A65

Laboratory Sample Number: L9408811-06
CSQ-01-102494-470
Sample Matrix: WATER

Date Collected: 24-OCT-94
Date Received : 25-OCT-94
Date Reported : 08-NOV-94

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1 Vial

PARAMETER	RESULT	UNITS	REF	METHOD	DATES PREP	DATES ANALYSIS
Aromatic Volatile Organics			1	8020		28-OCT
Benzene	< 1.0	ug/l				
Toluene	< 1.0	ug/l				
Ethylbenzene	< 1.0	ug/l				
Xylenes	< 1.0	ug/l				
1,2-Dichlorobenzene	< 1.0	ug/l				
1,3-Dichlorobenzene	< 1.0	ug/l				
1,4-Dichlorobenzene	< 1.0	ug/l				
Chlorobenzene	< 1.0	ug/l				
Methyl tert butyl ether	< 1.0	ug/l				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE MS/MSD ANALYSIS

Laboratory Job Number: L9408811

Parameter	MS %	MSD %	RPD
Volatile Organics Spike Recovery by GC MS/MSD for sample(s) 02-06			
1,1-Dichloroethene	106	92	14
Trichloroethene	82	82	0
Chlorobenzene	82	89	8
Benzene	93	87	7
Toluene	87	85	2
Ethylbenzene	86	87	1
Volatile Organics Spike Recovery by GC MS/MSD for sample(s) 01			
1,1-Dichloroethene	129	131	2
Trichloroethene	89	92	3
Chlorobenzene	101	98	3
Benzene	85	87	2
Toluene	82	81	1
Ethylbenzene	86	94	9

REFERENCES

1. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. 1986.

GLOSSARY OF TERMS AND SYMBOLS

< Indicates analyte not detected at stated value, i.e. Reporting Detection Limit.

REF Reference number in which test method may be found.

METHOD Method number by which analysis was performed.

RECEIVED NOV 1 0 1994

068090

ALPHA
Analytical Laboratories, Inc.

Eight Walkup Drive
Westborough, MA 01581-1019
508-898-9220 FAX 508-898-9193

CHAIN OF CUSTODY RECORD and ANALYSIS REQUEST RECORD

No.

Sheet 1 of 1

Company Name: ENSA ENVIRONMENTAL, INC	Project Number: 470 / P.O. Number: 2617	Project Name/Location: Crossroads Store Quechee, VT	Date Received in Lab: 10/25	Date Due: 11/8
Company Address: 205 Main Street 3rd Floor Brattleboro, VT 05301	Phone Number: (802) 254-3677 / FAX No.: 254-7630	Project Manager: Paul Miller	Alpha Job Number: (Lab use only) 9408811	

Container Codes: P = Plastic V = Vial C = Cube G = Glass A = Amber Glass B = Bacteria Container O = Other

MATRIX / SOURCE CODES: MW = Monitoring Well, RO = Runoff, O = Outfall, W = Well, LF = Landfill, L = Lake/Pond/Ocean, I = Influent, E = Effluent, DW = Drinking Water, R = River Stream, S = Soil, SG = Sludge, B = Bottom Sediment, X1 = Other, X2 = Other

ALPHA Lab# (Lab Use Only)	Sample I.D.	Containers (number/type)	Matrix / Source	Method Preserve. (number of containers): Unpres.	Ice	Nitric	Sulfuric	HCl	Other	Solubles - F.F.	Sampling: Date	Time	Analysis Requested
8811.1	CSQ-5-102474-470	2/✓	GW					X			10-24-94	1:48	8020 (gc only) N/C
.2	CSQ-6- " "											1:50	
.3	CSQ-7- " "											1:52	
.4	CSQ-8- " "											1:54	
.5	CSQ-02- " "											1:51	
.6	CSW-01 " "	✓	✓					✓			✓	1:50	N/C

Sampler's Signature	Affiliation	Date	Time
[signature]	ENSA Environmental	10-25-94	12:00

ADDITIONAL COMMENTS: tr c blank / duplicate included

NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	[signature]	[signature]	10/25	
2	[signature]	[signature]	10/25	9:30
3				
4				

ALPHA ANALYTICAL LABORATORIES

Eight Walkup Drive
Westborough, Massachusetts 01581-1019
(508) 898-9220

MA 086 NH 198958-A CT PH-0574 NY 11148 NC 320 SC 88006 RI A65

CERTIFICATE OF ANALYSIS

Client: ENSA Environmental, Inc.
Address: 205 Main Street; 3rd Floor
Brattleboro, VT 05301
Attn: Kristen Wade
Project Number: 470
Site: Crossroads Store/Mobil

Laboratory Job Number: L9408041
Invoice Number: 67173
Date Received: 30-SEP-94
Date Reported: 04-OCT-94
Delivery Method: Alpha

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L9408041-01	CSQ-1-92994-470	Quechee, VT
L9408041-02	CSQ-2-92994-470	Quechee, VT
L9408041-03	CSQ-3-92994-470	Quechee, VT
L9408041-04	CSQ-4-92994-470	Quechee, VT
L9408041-05	CSQ-02-2994-470	Quechee, VT
L9408041-06	CSQ-01-92994-470	Quechee, VT

Authorized by: James R. Roth

James R. Roth, PhD - Laboratory Manager

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA 086 NH 198958-A CT PH-0574 NY 11148 NC 320 SC 88006 RI A65

Laboratory Sample Number: L9408041-01
CSQ-1-92994-470
Sample Matrix: WATER

Date Collected: 29-SEP-94
Date Received : 30-SEP-94
Date Reported : 04-OCT-94

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2 Vial

PARAMETER	RESULT	UNITS	REF	METHOD	DATES PREP	DATES ANALYSIS
Aromatic Volatile Organics			1	8020		03-OCT
Benzene	< 50.	ug/l				
Toluene	< 50.	ug/l				
Ethylbenzene	< 50.	ug/l				
Xylenes	< 50.	ug/l				
1,2-Dichlorobenzene	< 50.	ug/l				
1,3-Dichlorobenzene	< 50.	ug/l				
1,4-Dichlorobenzene	< 50.	ug/l				
Chlorobenzene	< 50.	ug/l				
Methyl tert butyl ether	2800	ug/l				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA 086 NH 198958-A CT PH-0574 NY 11148 NC 320 SC 88006 RI A65

Laboratory Sample Number: L9408041-02
CSQ-2-92994-470
Sample Matrix: WATER

Date Collected: 29-SEP-94
Date Received : 30-SEP-94
Date Reported : 04-OCT-94

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2 Vial

PARAMETER	RESULT	UNITS	REF	METHOD	DATES PREP	DATES ANALYSIS
Aromatic Volatile Organics			1	8020		03-OCT
Benzene	< 5.0	ug/l				
Toluene	< 5.0	ug/l				
Ethylbenzene	< 5.0	ug/l				
Xylenes	< 5.0	ug/l				
1,2-Dichlorobenzene	< 5.0	ug/l				
1,3-Dichlorobenzene	< 5.0	ug/l				
1,4-Dichlorobenzene	< 5.0	ug/l				
Chlorobenzene	< 5.0	ug/l				
Methyl tert butyl ether	< 5.0	ug/l				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA 086 NH 198958-A CT PH-0574 NY 11148 NC 320 SC 88006 RI A65

Laboratory Sample Number: L9408041-03
CSQ-3-92994-470
Sample Matrix: WATER

Date Collected: 29-SEP-94
Date Received : 30-SEP-94
Date Reported : 04-OCT-94

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2 Vial

PARAMETER	RESULT	UNITS	REF	METHOD	DATES PREP	DATES ANALYSIS
Aromatic Volatile Organics			1	8020		03-OCT
Benzene	< 200	ug/l				
Toluene	890	ug/l				
Ethylbenzene	660	ug/l				
Xylenes	3000	ug/l				
1,2-Dichlorobenzene	< 200	ug/l				
1,3-Dichlorobenzene	< 200	ug/l				
1,4-Dichlorobenzene	< 200	ug/l				
Chlorobenzene	< 200	ug/l				
Methyl tert butyl ether	< 200	ug/l				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA 086 NH 198958-A CT PH-0574 NY 11148 NC 320 SC 88006 RI A65

Laboratory Sample Number: L9408041-04
CSQ-4-92994-470
Sample Matrix: WATER

Date Collected: 29-SEP-94
Date Received : 30-SEP-94
Date Reported : 04-OCT-94

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2 Vial

PARAMETER	RESULT	UNITS	REF	METHOD	DATES PREP	DATES ANALYSIS
Aromatic Volatile Organics			1	8020		03-OCT
Benzene	10000	ug/l				
Toluene	25000	ug/l				
Ethylbenzene	2500	ug/l				
Xylenes	11000	ug/l				
1,2-Dichlorobenzene	< 200	ug/l				
1,3-Dichlorobenzene	< 200	ug/l				
1,4-Dichlorobenzene	< 200	ug/l				
Chlorobenzene	< 200	ug/l				
Methyl tert butyl ether	< 200	ug/l				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA 086 NH 198958-A CT PH-0574 NY 11148 NC 320 SC 88006 RI A65

Laboratory Sample Number: L9408041-05
CSQ-02-2994-470
Sample Matrix: WATER

Date Collected: 29-SEP-94
Date Received : 30-SEP-94
Date Reported : 04-OCT-94

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2 Vial

PARAMETER	RESULT	UNITS	REF	METHOD	DATES PREP	DATES ANALYSIS
Aromatic Volatile Organics			1	8020		03-OCT
Benzene	7900	ug/l				
Toluene	20000	ug/l				
Ethylbenzene	1900	ug/l				
Xylenes	8900	ug/l				
1,2-Dichlorobenzene	< 500	ug/l				
1,3-Dichlorobenzene	< 500	ug/l				
1,4-Dichlorobenzene	< 500	ug/l				
Chlorobenzene	< 500	ug/l				
Methyl tert butyl ether	< 500	ug/l				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA 086 NH 198958-A CT PH-0574 NY 11148 NC 320 SC 88006 RI A65

Laboratory Sample Number: L9408041-06
CSQ-01-92994-470
Sample Matrix: WATER

Date Collected: 29-SEP-94
Date Received : 30-SEP-94
Date Reported : 04-OCT-94

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2 Vial

PARAMETER	RESULT	UNITS	REF	METHOD	DATES PREP	DATES ANALYSIS
Aromatic Volatile Organics			1	8020		03-OCT
Benzene	< 1.0	ug/l				
Toluene	< 1.0	ug/l				
Ethylbenzene	< 1.0	ug/l				
Xylenes	< 1.0	ug/l				
1,2-Dichlorobenzene	< 1.0	ug/l				
1,3-Dichlorobenzene	< 1.0	ug/l				
1,4-Dichlorobenzene	< 1.0	ug/l				
Chlorobenzene	< 1.0	ug/l				
Methyl tert butyl ether	< 1.0	ug/l				

Comments: Complete list of References and Glossary of Terms found in Addendum I

REFERENCES

1. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. 1986.

GLOSSARY OF TERMS AND SYMBOLS

< Indicates analyte not detected at stated value, i.e. Reporting Detection Limit.

REF Reference number in which test method may be found.

METHOD Method number by which analysis was performed.

ALPHA
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CHAIN OF CUSTODY RECORD and ANALYSIS REQUEST RECORD

No. 39944
Sheet ___ of ___

Company Name:	Project Number:	Project Name/Location:	Date Received in Lab:	Date Due:
Ensa Envir.	P.O. Number: 470 2542	Crossroads Store/ mobil Ovechee, VT	9/30	RUSH 10/3

Company Address:	Phone Number: / FAX No.:	Project Manager:	Alpha Job Number: (Lab use only)
		Kirsten ~~Kristen~~ wade	9408041

Container Codes: P = Plastic V = Vial C = Cube G = Glass A = Amber Glass B = Bacteria Container O = Other

MATRIX / SOURCE CODES: MW = Monitoring Well, RO = Runoff, O = Outfall, W = Well, LF = Landfill, L = Lake/Pond/Ocean, I = Influent, E = Effluent, DW = Drinking Water, R = River Stream, S = Soil, SG = Sludge, B = Bottom Sediment, X1 = Other, X2 = Other

ALPHA Lab # (Lab Use Only)	Sample I.D.	Containers (number/type)	Matrix/Source	Method Preserve. (number of containers): Unpres.	Ice	Nitric	Sulfuric	HCl	Other	Solubles - F.E.	Sampling: Date	Time	Analysis Requested
8041.1	CSO-1-92994-470	2V	mw					2			9/29	242	8020
.2	-2-											246	
.3	-3-											248	
.4	-4-											255	
.5	-05-											250	N/C
.6	-01-	1V						1				200	N/C

Sampler's Signature	Affiliation	Date	Time

ADDITIONAL COMMENTS:
split w/ Job #8040.

NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	Alpha	S. McGee	9/30	500
2				
3				
4				

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CHAIN OF CUSTODY RECORD and ANALYSIS REQUEST RECORD

No. 36493

Sheet 1 of 1

Company Name: ENSA Environmental, Inc.

Project Number: 470

P.O. Number: 2547

Project Name/Location: CROSSROADS STORE - MOBIL QUECHEE, VT

Date Received in Lab: 9/30

Date Due: 10/14

Company Address: 205 Main St, 3rd Floor Brattleboro, VT 05301

Phone Number: 802 254 3677

FAX No.: 254 7630

Project Manager: KIRSTEN WADE

Alpha Job Number: (Lab use only) 940 8040

Container Codes: P = Plastic V = Vial C = Cube G = Glass A = Amber Glass B = Bacteria Container O = Other

MATRIX / SOURCE CODES
MW = Monitoring Well RO = Runoff O = Outfall W = Well LF = Landfill
L = Lake/Pond/Ocean I = Influent E = Effluent DW = Drinking Water
R = River Stream S = Soil SG = Sludge B = Bottom Sediment
X1 = Other
X2 = Other

ALPHA Lab # (Lab Use Only)	Sample I.D.	Containers (number/type)	Matrix / Source	Unpres.	Ice	Nitric	Sulfuric	HCl	Other	Solubles - F.F.	Sampling Date	Sampling Time	Analysis Requested
8040 .1	CSQ-1-92994-470	(2/V)(1/A)	MW					X			9/29	2:42	~~8020~~ + 418.1 (TPH)
.2	CSQ-2-92994-470	(2/V)(1/A)	MW					X			9/29	2:46	~~8020~~ + 418.1 (TPH)
.3	CSQ-3-92994-470	(2/V)(1/A)	MW					X			9/29	2:48	~~8020~~ + 418.1 (TPH) Rush Analysis 8020's only
.4	CSQ-4-92994-470	(2/V)(1/A)	MW					X			9/29	2:55	~~8020~~ + 418.1 (TPH)
~~.5~~	~~CSQ-C2-92994-470~~	~~(2/V)~~	~~MW~~					~~X~~			~~9/29~~	~~2:50~~	~~8020~~
~~.6~~	~~CSQ-C1-92994-470~~	~~(1/V)~~	~~MW~~					~~X~~			~~9/29~~	~~2:00~~	~~8020~~
	TOTAL	(11/V)(4/A)											

Sampler's Signature: David C. Ball Affiliation: ENSA ENVIRONMENTAL Date: 9/30/94 Time: 9:00

ADDITIONAL COMMENTS:
1 TRIP BLANK
1 DUPLICATE
Rush - 2 working Days

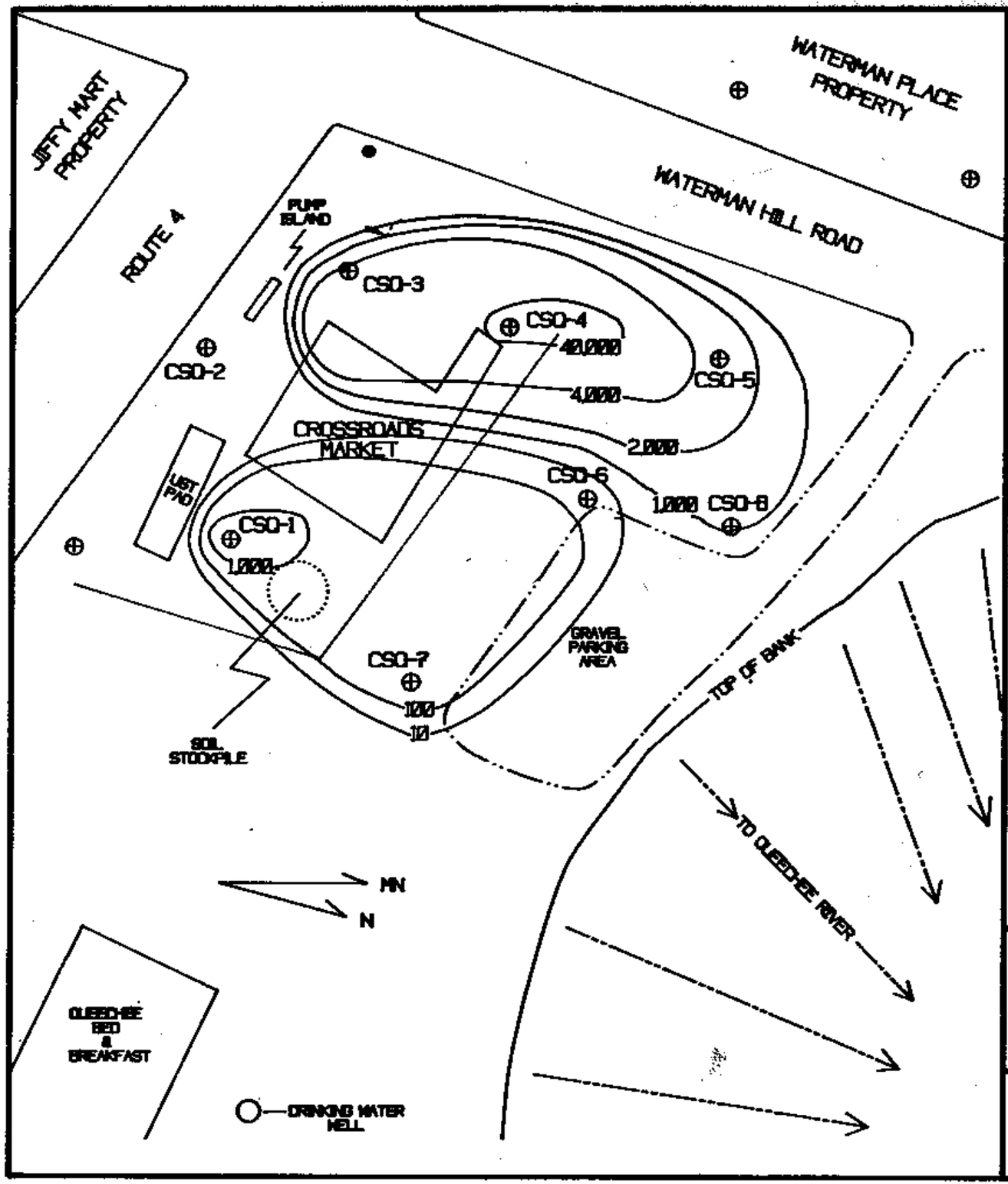
split w/ Tob #8041

NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	David C. Ball	C Dim	9/30	[illegible]
2	C Dim	L. McGuel	9/30	[illegible]
3				
4				

Appendix E
BTEX and MTBE Isoconcentration Map

TOTAL BTEX AND MTBE ISOCONCENTRATION MAP FOR 9/29/94 to 10/24/94

CROSSROADS MARKET
ROUTE 4
QUEECHEE, VERMONT



LEGEND

- CSO-1 ⊕ — MONITORING WELL
- 4,000 — BTEX ISOCONCENTRATION CONTOUR OF 4,000 PPM
- 1,000 — MTBE ISOCONCENTRATION CONTOUR OF 1,000 PPM
- ⊕ — PROPOSED MONITORING WELL
- ——— — FENCE LINE (ALSO DENOTES EXTENT OF CROSSROADS MARKET PROPERTY)
- ● — TELEPHONE POLE

BTEX AND MTBE CONCENTRATIONS (PPM)

	BTEX		MTBE
CSO-1	ND	CSO-1	2,800
CSO-2	ND	CSO-2	ND
CSO-3	4,550	CSO-3	ND
CSO-4	46,500	CSO-4	ND
CSO-5	2,480	CSO-5	ND
CSO-6	ND	CSO-6	91
CSO-7	ND	CSO-7	230
CSO-8	1,112	CSO-8	ND

ND = NON DETECTABLE

SCALE
1 : 360

0 30 60 FEET

/4/[illegible]94

PREPARED BY:
ENSA ENVIRONMENTAL, INC.
P.O. BOX 1760, 205 MAIN STREET
BRATTLEBORO, VERMONT 05302